EQUITY VALUATION OF MODERN MASTER LIMITED PARTNERSHIPS

by

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A DISSERTATION

Presented to the Department of Accounting
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

June 2015

DISSERTATION APPROVAL PAGE

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Title: Equity Valuation of Modern Master Limited Partnerships

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Degree awarded June 2015

DISSERTATION ABSTRACT

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Doctor of Philosophy

Department of Accounting

June 2015

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Using a sample of 57 master limited partnerships (MLPs) formed from corporate assets between 1982 and 2011, I examine the share price effects on parent corporations from forming MLPs. Specifically, I compare announcement period returns during the first and second waves of MLP formations—1982-1987 and 1988-2011, respectively—to assess the effect of structural changes in the MLP agency and operating environments on the market response to MLP formation. I document significantly higher 3-day and 5-day announcement period returns for second wave MLP formations, suggesting that changes to the MLP agency and operating environments have enhanced the value impact of MLP formation. I also find evidence that parent corporations benefit from the increased opportunity to exploit conflicts of interest with the MLP, which arise from these changes. Finally, I examine the prediction of prior literature that MLP formation improves the parent company's information environment, finding support for this assertion in the form of reduced idiosyncratic return volatility.

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ACKNOWLEDGMENTS

I wish to express sincere appreciation to Professor Ryan Wilson for his support and guidance in the development and writing of this dissertation. In addition, special thanks are due to Professors David Guenther, Linda Krull, and Wesley Wilson for their insights and advice. I also thank Professor Steven Matsunaga and workshop participants at the University of Wisconsin-Milwaukee for their valuable input. I acknowledge financial support from the AICPA Accounting Doctoral Scholars program and from the Lundquist College of Business Accounting Department.

To Karly, Coen, and Josie

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CHAPTER I

INTRODUCTION

The Revenue Act of 1987 effectively ended the wave of master limited partnership ("MLP") formations in the 1980s—which began with Apache Petroleum in 1981—by limiting the tax benefits of the MLP form to firms generating revenues principally from passive activities and from the exploration, refining, and transportation of natural resources. The technology bull market of the 1990s further rendered natural resource MLPs afterthoughts in the minds of investors and academics. During the last two decades, however, the boom in energy production and transportation in the United States has reignited the use of, and interest in, the MLP. Indeed, this "second wave" of MLP formations—beginning as a trickle in the mid-1990s, and becoming a flood by the early-2010s—has proven even more robust than the first. Total market capitalization of MLPs, as of September 2014, amounts to over a half-trillion dollars, with growth of $133 billion during calendar 2013 alone.[1] With the U.S. expected to become the world's largest oil producer by the end of the current decade, and with integrated major oil producers, such as Royal Dutch Shell, beginning to launch MLPs, the economic significance of the MLP is likely to persist.

The purpose of this study is to examine how structural differences between first and second wave MLPs affect the share price response to MLP formation announcements. Specifically, using a sample of 57 master limited partnerships ("MLPs") formed from corporate assets between 1982 and 2011, I compare the announcement period returns of parent corporations during the first and second waves of MLP formations—1982-1987 and 1988-2011, respectively—to assess the effect of changes in

[1] According to Alerian and Wells Fargo Securities (2014)

the MLP agency and operating environments on the market response to MLP formation. These changes include the allowance of modifications to fiduciary responsibility under Delaware partnership law, beginning in 1990; the popularization of incentive distribution rights ("IDRs") during the 1990s; and the decreased use of scope restrictions within MLP partnership agreements beginning in the late 1980s. I observe significantly positive abnormal announcement period returns for second wave MLP formations, and positive but insignificant announcement returns for first wave formations, and find that the difference between first and second wave announcement returns is significant. This suggests that changes to the MLP agency and operating environments between the first and second waves enhanced the value impact of MLP formation for the parent corporation. I also find some evidence that the effect of these changes is particularly strong for firms having comparatively high agency costs, consistent with changes in the agency environment driving cross-sectional valuation differences between first and second wave MLP formations. In addition, I examine the prediction of prior literature that the isolation of a subset of corporate assets through the formation of an MLP results in improved information flow and positive share price effects to the parent corporation. I find support for this prediction, with parent corporations' idiosyncratic return volatility reduced after forming MLPs.

Master limited partnerships are limited partnerships—or limited liability companies—whose "units," are traded publicly, much like shares of public corporations. Unlike corporations, MLPs receive flow-through tax treatment, meaning that profits are taxed only at the partner level and that distributions to partners are generally tax-free.[2] This tax-preferred treatment of cash distributions makes the MLP organizational form

[2] See Chapter II for additional discussion of MLP tax treatment.

particularly attractive to firms having large, steady cash flows and few growth opportunities (Ciccotello and Muscarella, 2001). Firms owning oil and gas pipelines or other "midstream" assets generally fit this mold, and constitute the majority of the MLP market, though several MLPs are engaged in natural resource exploration or in real estate and investment activities. Management of the MLP is concentrated in the general partner, which generally appoints and employs the MLP's management and board of directors, and is frequently wholly-owned by a "sponsor" firm, which may be a publicly-traded corporation.

MLPs are formed in five ways: total conversion of a corporate entity into a partnership (total conversion); carve-out of a subset of corporate assets, with all or part offered for public sale (carve-out); spin-off of corporate assets, with MLP units distributed to shareholders (spin-off); combination of existing partnerships into an MLP (roll-up)[3]; and formation of a new entity for public offering (new IPO) (Shelley, Omer, and Atwood, 1998). While first wave MLP formations in this study are dispersed somewhat evenly across carve-outs, spin-offs, and total conversions, modern MLP formations are overwhelmingly structured as carve-outs, with part (or all) of the limited partner interest offered to the public.[4] In the context of a carve-out transaction, the forming corporation transfers a subset of assets to the MLP—these assets may consist of individual pipeline properties, for example, or may constitute an entire operating segment of the parent—and offer a portion of the limited partner interest to the public, retaining

[3] This type of formation gave MLPs their name, as multiple limited partnerships were rolled-up into one "master" limited partnership.

[4] 45 of 47 second wave sample firms are formed via carve-out, compared to 12 of 21 first wave firms. Because prior literature indicates that carve-outs and spin-offs are valued differently, I restrict my analysis to MLPs formed via carve-out. See Chapter IV for additional discussion. Limited partner interests offered publicly range from 2.7% in the case of Sun Energy Partners to 98% in the case of TC Pipelines LP.

management of the assets through a general partner interest in the MLP. The proceeds from the public offering are returned to the parent corporation and are frequently used for investment, debt payment, or for distribution to shareholders. The stated motivations for forming an MLP vary, with managers of parent corporations pointing to lower capital costs[5], valuation differences between MLPs and similar corporations[6], higher yields for investors, more efficient acquisitions, and debt reduction, among other expected benefits.[7]

Prior literature has identified several potential costs and benefits of MLP formations during the first wave. Moore, Christensen, and Roenfeldt (1989) was the first study to examine the equity valuation effects to parent corporations from forming master limited partnerships during the period 1982-1987. They find that parent corporations enjoy average positive abnormal returns of 4.61% during the two-day window around the announcement of MLP formation. Moore et al (1989) set forth five factors which may contribute to positive share price reactions: avoidance of double taxation, reductions in free cash flow, signaling of private information, improved information flow, and improved asset management; and three factors which might have negative share price effects: conflicts of interest, administrative costs, and informational effects of equity issuance.[8] This study revisits the equity valuation consequences of forming master limited partnerships, with consideration given to numerous structural changes to MLPs

[5] El Paso Corp. press release dated 2/21/2007, for example

[6] Pioneer Natural Resources 4/24/2007 presentation.

[7] A more detailed description of the MLP formation transaction is presented in Chapter II.

[8] These potential sources of share price effects are described in detail in Chapter II.

and to their operating environments in the years subsequent to the first wave of MLP formations.

In particular, I expect that three changes to the agency and operating environments of MLPs could cause the share price response to MLP formation to differ across the first and second waves. First, beginning August 1, 1990, MLPs organized under Delaware alternative entity law are granted the authority to modify the fiduciary responsibility of the general partner to the MLP's limited partners through the terms of their partnership agreements.[9] This alleviation of the general partner's fiduciary responsibility could significantly exacerbate the agency conflict between the general partner and limited partners—which is detailed in Chapter II of this study.

Second, the use of incentive distribution rights ("IDRs") increased significantly from the first wave to the second.[10] IDRs are cash distribution agreements which entitle the general partner to receive an increasingly disproportionate share of cash distributed as the level of distribution increases. In some cases, general partners may receive close to 50 percent of distributed cash, despite holding only a two percent ownership interest. By incentivizing the general partner to maximize cash payouts, IDRs are generally believed to reduce the agency costs associated with the firm's free cash flows. However, the possibility that general partners may abuse IDRs by foregoing positive NPV investments in favor of distributions has received recent media and analyst attention.

Third, the inclusion of restriction of scope provisions within MLP operating agreements has waned since the first wave of MLP formations. Prior study points to

[9] On August 1, 2004, Delaware law was clarified to allow the full waiver of fiduciary duty.

[10] Only one MLP formed from corporate assets between 1981 and 1987, based on the samples of Moore et al (1989) and Martin & Kensinger (1990), employed an IDR, compared to 39 out of 47 sample firms formed between 1988 and 2011.

improved asset management, stemming from a reduction in the diversity of tasks required of managers, as a positive share price effect of master limited partnership formation, an assertion which finds support the literature on corporate focus (Comment and Jarrell, 1995; Daley, Mehrotra, and Sivakumar, 1997). A decrease in such managerial focus among MLPs could alter the share price effect of MLP formation.

Although the literature is generally clear that an erosion of managerial focus could decrease the value of MLP formation, the combined effect of decreased managerial focus with the introduction of fiduciary modification and incentive distribution rights is an empirical question. If the net effect of fiduciary modification and IDRs is an increase in agency costs, two possibilities exist. First, the ability of the parent company to exploit conflicts of interest may increase, with benefits accruing to the parent firm and its shareholders—through favorable allocations of cash flow or through self-dealing arrangements, for example—at the expense of the MLP's limited partners. If this is so, and if its effect outweighs any value-reduction from decreased managerial focus, one would expect the value of MLP formation to the parent corporation to be greater in the second wave than in the first. On the other hand, in forming an MLP, management could be seen by investors as underestimating the potential costs of increased litigation stemming from MLP formation, and view such formation as an overall negative NPV action, causing announcement period returns to be lower during the second wave. Similarly, if agency costs are reduced by the presence of fiduciary modification and IDRs, shareholders of the parent corporation may benefit from reduced litigation exposure—leading to higher announcement period returns—or may be disadvantaged by

the parent's reduced ability to take advantage of conflicts of interest with the MLP—resulting in lower second wave announcement returns.

Using a sample of 57 master limited partnerships formed from a carve-out of corporate assets between 1982 and 2011, I compare the three-day and five-day announcement period returns of parent corporations during the first and second waves of MLP formations. In univariate tests, I find that cumulative abnormal returns ("*CAR*") over the three-day (five-day) window surrounding the announcement date are 2.84% (2.74%) higher for second wave formations than for first wave formations, and that the difference is statistically significant. When controls for factors previously found to affect MLP announcement returns are included, I find that 3-day (5-day) *CAR* is 3.88% (4.71%) higher for second wave formations.

The results indicate a significant increase in value to the parent corporations from an MLP formation. The reader must use care in drawing conclusions about the nature of the effect of structural changes on the market's reaction to MLP formation, however, as this initial test of announcement period *CAR* is unable to distinguish their individual share price effects. As described above, the positive change in market reaction to formation announcements may reflect an overall decrease in agency costs—suggesting that incentive distribution rights offset any ill-effects from fiduciary modification—resulting in reduced costs associated with resolving conflicts of interest. Conversely, the findings may suggest an increase in agency costs—with IDRs failing to remedy agency problems associated with fiduciary modification (or even exacerbating them)—allowing parent corporations to better avail themselves of conflicts of interest with the MLP and its limited partners. Subsequent tests are directed at differentiating between these two

possibilities, as well as at clarifying the mechanisms through which structural changes affect share price reactions to MLP formation generally.

To this end, I next examine whether changes to the MLP agency environment between the first and second waves affected firms differently depending on the nature of the MLP activities. Wolfson (1985) describes the unique susceptibility of oil and gas partnerships of the 1980's to conflicts of interest, specifically relating to the ability of the general partner to use partnership assets to "prove-up" properties held on its own account and to pursue suboptimal drilling strategies for its own benefit. Though MLPs of today are not identical to early oil and gas partnerships, many MLPs which engage in oil and gas exploration—as opposed to midstream or other activities—could have the ability to avail themselves of similar conflicts of interest. I expect that these firms are particularly sensitive to changes in agency costs. Indeed, when restricting the sample to firms engaging in exploration activities, I find that three-day (five-day) announcement period CAR is 10.63% (10.83%) higher for second-wave formations than for first wave formations, and that the difference is statistically significant. In multivariate testing, I find that the increased returns to MLP formation from the first to the second wave are particularly pronounced for exploration MLPs, suggesting that structural changes have made these firms in particular more attractive to parent company shareholders.

Next, I examine the effect of a change in Delaware alternative entity law, effective August 1, 2004, allowing the full waiver of fiduciary duty by partnerships and LLCs. Such a law change should increase the agency costs of forming an MLP, as it further limits the recourse of limited partners in cases of general partner malfeasance. Partitioning second wave MLP formations into two groups—those formed prior to 2004,

and those formed after 2004—and comparing announcement period returns reveals that three-day (five-day) *CAR* around the announcement date is 3.89% (4.45%) higher for post-waiver formations than for pre-waiver formations, and that the difference is statistically significant. However, when controls for MLP size and parent ownership are included, the increase in *CAR* during the post-fiduciary waiver period falls short of statistical significance in two-tailed testing. This finding provides limited evidence that shareholders of the parent corporation may benefit from increases in the parent's ability to take advantage of conflicts of interest with the MLP.

Finally, I take advantage of the increased sample size afforded by the second wave of MLP formations to examine a central prediction of prior literature on share price effects of MLP formation—that the isolation of a subset of corporate assets through the formation of an MLP results in improved information flow and positive share price effects to the parent corporation. Although this hypothesis is generally supported by literature on corporate spin-offs (Krishnaswami and Subramaniam, 1999, for example), recent studies of corporate tax-planning activities argue that increased organizational complexity stemming from tax-favored transactions increases information asymmetry between management and investors (Balakrishnan, Blouin, and Guay, 2012; Chen, Hepfer, Quinn, and Wilson, 2014). To determine the impact of MLP formation on the information environment of the parent corporation, I examine changes in the level of information asymmetry, measured by idiosyncratic return volatility and by price-scaled percentage bid-ask spreads, around MLP formation announcements. I find that both measures of information asymmetry are reduced by MLP formation, supporting the assertion of prior literature that carving-out corporate assets into an MLP has positive

information effects, though only the reduction in idiosyncratic return volatility is statistically significant.

This paper makes several contributions to the literature. By examining the market's response to MLP formation announcements over both the first and second waves, this study sheds light on the relationship between changes in the MLP agency environment and announcement period stock returns, suggesting that shareholders of parent corporations may benefit from the increased instance of conflicts of interest associated with MLP formation, and enhances our understanding of the share price effects of MLP formation, generally. Next, this paper provides additional evidence on the relationship between corporate carve-outs, organizational complexity, and information asymmetry by studying changes in idiosyncratic return volatility and bid-ask spreads around MLP formations. Finally, by examining the link between Delaware alternative entity law changes and price effects of MLP formation, this study contributes to the ongoing debate among legal scholars on whether contractual bargaining can substitute for traditional fiduciary duty.

The remainder of this paper is organized as follows: Chapter II presents institutional background and reviews the literature. Chapter III develops the hypotheses. Chapter IV describes the sample and presents descriptive statistics. Chapter V reports the results of empirical testing, and Chapter VI concludes.

CHAPTER II

BACKGROUND AND PRIOR LITERATURE

Background

Master limited partnerships are limited partnerships, and more recently, limited liability companies, whose shares, or "units," are traded publicly. MLPs typically have one general partner, organized as an LLC, which holds a two percent general partner interest in the MLP. This LLC is generally a special purpose vehicle, which is itself wholly owned by a "sponsor," frequently a publicly-traded corporation. The management and board of directors, if applicable, of the MLP are usually appointed and employed by the general partner, with their responsibilities to the MLP outlined in the limited partnership agreement and in relevant state and federal law (Goodgame, 2005). An example of a typical MLP organizational structure is presented in Appendix A.

The popularity of the master limited partnership as an organizational form has experienced ebbs and flows over the past three decades. The first MLP, Apache Petroleum, was formed in 1981, quickly followed by 107 more MLP formations, ranging from food retailers to chemicals and plastics companies, during the remainder of the 1980s (Ciccotello and Muscarella, 2001). The Revenue Act of 1987 dramatically slowed the ascension of the MLP structure by limiting the tax benefits of MLP treatment—described below—to firms with at least ninety percent of income coming from "exploration, development, mining or production, processing, refining, transporting…of any mineral or natural resource." Indeed, according to Ciccotello and Muscarella (2001), only eleven MLPs were formed between 1990 and 1995. The recent expansion of oil and gas exploration and production in North America, however, has brought about resurgence

in the MLP organizational form, with an increase in energy sector MLP market capitalization from $2 billion in 1994 to $464 billion in 2013.[11]

MLPs exist primarily as a result of their pass-through tax treatment. That is, income generated by the limited partnership is taxed at the partner level, while distributions from the partnership to its partners are non-taxable.[12] Collins and Bey (1986) and Guenther (1992) point out that the absence of double-taxation in the partnership form is not sufficient to guarantee lower tax costs than the corporate form. Indeed, corporate and individual tax rates, as well as dividend levels, must also be considered when determining the relative tax costs of each form.[13] As a result, and consistent with the argument of Jensen (1986), firms which generate high cash flow, and which have few investment opportunities are most benefitted by organizing as an MLP, as their large cash distributions will be free from dividend taxation. Gentry (1994) and Ciccotello and Muscarella (1997) confirm this by showing that MLPs pay higher dividends and have lower capital expenditures than their corporate brethren.

In addition to avoiding the double taxation of corporate income, another important benefit to investors in early master limited partnerships was the flow-through of losses from the partnership to its partners. Prior to the 1986 Tax Reform Act, investors were

[11] According to FactSet and Wells Fargo Securities (2014)

[12] MLPs frequently distribute cash in excess of the partners' allocable net taxable income, resulting in a return of basis. This lowers the limited partner's basis in his units, which may increase the amount of capital gain recognized, and taxed, at such time as the units are sold. If distributions are sufficient to reduce the partner's basis below zero, the remainder constitutes a "distribution in excess of basis," which may be taxable to the partner at the applicable capital gains tax rate.

[13] Guenther (1992) also points out that any reduction in tax costs realized from use of the partnership form must be balanced against increases in transaction costs stemming from use of the same. These transaction costs may arise from differences in governance characteristics between the corporate and partnership forms, which are the subject of this study.

able to use partnership losses to offset taxable income from other sources to the extent they were "at-risk" in the partnership.[14] The 1986 Tax Reform Act introduced passive loss rules, which sharply reduced the tax benefits available to limited partners. These rules specify that passive losses—such as those accruing to a limited partner in an MLP—can only be used to offset gains from other passive activities. The Revenue Act of 1987 further limited the tax benefits of MLPs by mandating that publicly traded partnerships not generating at least 90 percent of gross income from "qualifying sources"[15] be treated as corporations for tax purposes. Further, it requires that the passive loss rules set forth by the 1986 Tax Reform Act, under Section 469, be applied separately for each publicly traded partnership (or MLP).[16] This means that investors in MLPs may not reduce their taxable income from other passive sources, including other MLPs, with losses flowing from their investment in the MLP.

MLP Formation

The formation of a master limited partnership via carve-out generally takes place in several phases, including the announcement of intent to form MLP, the formation of a limited partnership, the contribution of assets to the partnership, and the offering of limited partner units to the public. The order in which these events occur may vary. For example, Shamrock Logistics LP (now known as NuStar Energy LP) was formed by Ultramar Diamond Shamrock Corporation in 1999, holding various midstream assets at that time, but the announcement of Ultramar's intent to offer units publicly was not made

[14] The amount considered "at-risk" is generally the adjusted basis of money and property contributed to the partnership plus any amounts borrowed with respect to the partnership. See IRC §465(b)(1).

[15] IRC §7704(d) lists qualifying income as that from passive activities and from "exploration, development, mining or production, processing, refining, transportation…of any mineral or natural resource," among other things.

[16] IRC §469(k)(1)

until August 14, 2000. The level of detail provided in the announcement of MLP formation also varies—in the case of Star Gas Partners LP, the announcement was accompanied by the filing of a Registration Statement with the Securities and Exchange Commission, and outlined the specific assets to be owned by the MLP, the expected IPO proceeds, and the use of funds to be raised in the IPO. In contrast, in its MLP formation announcement on February 21, 2007, El Paso Corp. stated only that it planned to form an MLP during the current year, and that doing so would allow El Paso to benefit from lower capital costs and make its pipeline group more attractive to investors.

The subdivision of assets by a corporation into an MLP can significantly change the way those assets are governed, as highlighted in the following example. On June 1, 1992, Enron Corp. ("Enron") filed a registration statement for public offering of a newly-formed MLP, Enron Liquids Pipeline, LP ("ELP") (later purchased by Kinder Morgan, Inc. and renamed Kinder Morgan Energy Partners, LP[17]), with the Securities and Exchange Commission. Under the terms of the registration, Enron transferred certain liquefied natural gas and petroleum pipeline assets to ELP in exchange for the net proceeds of the IPO, along with $125 million raised through a private debt placement by ELP. Prior to this transaction, the pipeline assets were held by Enron directly, and were governed by the management and board of directors of Enron. After the formation and public offering of ELP, Enron maintained a two percent general partner interest and a 14 percent limited partner interest in ELP—both through Enron Liquids Pipeline Company ("ELPC"), a wholly-owned subsidiary—with the remaining 86 percent limited partner interest held publicly by individual investors. Enron maintained managerial control of the

[17] Richard Kinder and William Morgan served on the Board of Directors of ELPC at the time of its sale, with Kinder resigning as president of Enron to co-found Kinder Morgan, Inc. at that time.

pipeline assets through its ownership of ELPC, appointing ELPC's management and board of directors—as is generally the case, the limited partners of the MLP did not possess the voting rights to elect or to remove board members. In essence, the subdivision of assets into the MLP effectively relieved individual shareholders, who together held a majority ownership interest in the pipeline assets, of their ability to oversee the governance of those assets through voting rights. It is the change in governance brought forth by MLP formation that makes a study of the impact of changes in the MLP agency environment on the share price effects of such formation particularly relevant.

Prior Literature

Several prior studies examine the valuation consequences of MLP formations during the 1980s. Moore et al. (1989) study the equity valuation effects to parent (or sponsoring) corporations from forming master limited partnerships during the period 1982-1987, finding that parent corporations enjoy average positive abnormal returns of 4.61% during the two-day window around the announcement of MLP formation. The authors posit that this positive price reaction is related to (1) tax advantages, (2) reduction of free cash flow, (3) information signaling, (4) reduced information asymmetry, and (5) improved efficiency of asset management. Rutherford and Springer (1994) support these results, and also offer evidence that announcement returns do not differ across industries.

Martin and Kensinger (1990) perform a similar study of rollouts of MLPs in the oil and gas industry over the same time period, also finding generally positive price reactions to MLP formation announcements. They also show that the size of the rollout relative to the parent is positively related to market reaction, and that the share of the newly-formed MLP retained by the parent is negatively related to announcement date

returns. The authors argue that the latter result provides support for tax advantages and reductions in free cash flow as drivers of the positive market response to spinoffs.[18]

Christensen and Christensen (1991) study rollouts of limited partnerships by publicly traded corporations between 1976 and 1985, also finding generally positive abnormal returns around LP formation announcements. They perform secondary analyses similar to those of Martin and Kensinger (1990), but with different results. Specifically, Christensen and Christensen (1991) find that announcement returns are positively related to the share of LP interest retained by the parent corporation. Because they study formations of limited partnerships which are not necessarily publicly traded, parent ownership could provide a positive signal about the value of the assets held in the LP which would not be necessary in the context of an MLP, where information about partnership assets is publicly available. Denning and Shastri (1993) examine publicly traded partnership formations over the period 1980 through 1989, finding positive abnormal announcement period returns of 4.24 percent. They find that, consistent with other studies, gains are greater for spinoffs than for public issue carve-outs. Interestingly, they show that partnership formations after the Revenue Act of 1987, when the tax benefits of MLP formation were reduced, yield abnormal returns greater than those of pre Revenue Act of 1987 formations; though only four firms from 1988 and 1989 are included in the study.

Michaely and Shaw (1995) study the choice of divestiture form among parents of master limited partnerships—spin-off vs. carve-out—and examine subsequent operating performance of both the parent corporations and MLPs. They argue that the type of

[18] To the extent that MLP ownership is retained by the parent corporation, the income of the MLP remains subject to corporate-level taxes, and the cash flow of the MLP remains under the eventual control of the parent's managers.

divestiture is driven largely by the parent firm's access to capital markets. Consistent with prior study, Michaely and Shaw (1995) find more positive announcement returns for spin-off firms than for carve-out firms, however, they go on to show that parent firms that spin-off MLPs exhibit significantly lower long-run abnormal returns compared to parents that form an MLP through a carve-out.

Shelley, Omer, and Atwood (1998) examine the tax and nontax determinants of positive share price reactions to MLP formations between 1980 and 1990. Using an index of firm and industry factors identified by the capital restructuring literature, they find that the market values both the tax benefits and costs which are unique to MLPs as well as the nontax benefits and costs associated with capital restructurings in general. Specifically, they identify tax advantages, improved asset management, funding new projects, and improved asset valuation as the expected benefits from restructuring with a publicly traded partnership.

This paper extends and enhances the literature on share price effects of MLP formation. Most importantly, it extends the examination of master limited partnership formations through 2011, where prior studies are limited to MLPs formed before 1990. This is significant for several reasons. First, the allowance of fiduciary modification under Delaware law began in August of 1990, with full fiduciary waiver available starting in 2004. Second, the use of incentive distribution rights was not common among MLPs until at least the 1990's. Third, the use of scope limitations in MLP operating agreements decreased sharply after 1988 (Ciccotello and Muscarella, 2001). Because the sample periods covered by prior study terminate between 1985 and 1990, this paper is the

first to address these structural changes to the MLP operating and agency environments and their effect on second-wave MLP formation announcements.

Benefits and Costs of Forming MLPs

As noted in prior chapters, existing literature on the share price effects of MLP formation sets forth an array of potential benefits and costs of forming an MLP (Moore et al., 1989; Michaely and Shaw, 1995; and Shelley, Omer, and Atwood, 1998). The potential benefits of MLP formation are as follows:

Avoidance of Double Taxation. MLPs are taxed as partnerships, meaning that their income is taxed only at the individual level. The mechanism through which this tax benefit impacts the parent corporation's share price depends on the method of MLP formation. In the case of a spin-off, the shareholders of the parent corporation maintain ownership of the spun-off assets, but face a lower tax burden on the profits they generate, increasing the overall value of the shareholders' interests. In the case of a carve-out, the subdivision of assets into a tax-favored vehicle reduces the parent corporation's cost of capital by allowing it to command a higher valuation on the carved-out assets in a public offering. In both cases these changes may be reflected in announcement period stock returns of the parent corporation.

The magnitude of the benefit derived from avoidance of double-taxation is dependent upon the rates at which equity income is taxed to investors in corporations and partnerships. That is, as the tax rates on corporate income and dividends decrease (increase), and as the tax rate on individuals increases (decreases), the positive valuation effect of forming an MLP decreases (increases). Since the beginning of the first wave, all three of these rates have generally trended downward, with the most dramatic rate change

taking place in 2003, when the dividend tax rate was reduced from 38.6 percent—the top marginal tax rate on ordinary income—to 15 percent.

Reduction of Free Cash Flow. Jensen (1986) argues that the reduction of free cash flow reduces agency costs, and notes that the removal of managerial discretion over free cash is particularly valuable in the oil and gas industry, in which the majority MLPs operate. Most MLPs stipulate the mandatory minimum distributions of free cash within their partnership agreements, with many requiring the distribution of all free cash flow.[19]

Information Signaling. Moore et al. (1989) finds that the initial payouts of MLPs are significantly higher than the dividend payouts of their parent firms prior to the MLP formation announcement. The formation of an MLP frequently results in a commitment to increased cash payouts, which, consistent with Miller and Rock (1985) and others, may signal management's private information about the firm's future performance.

Reduced Information Asymmetry. Myers and Majluf (1984) report the negative valuation consequences of information differences between informed managers and uninformed investors about asset valuation. Schipper and Smith (1986) and Krishnaswami and Subramaniam (1999) show that equity carve-outs and spin-offs attenuate these valuation effects. By isolating a subset of corporate assets into an MLP, and by conveying information about those assets to the public through registration documents, MLP carve-outs and spin-offs may likewise increase share value by reducing information asymmetry. This prediction is tested formally within this study.

Improved Efficiency of Asset Management. Comment and Jarrell (1995) and Daley, Mehrotra, and Sivakumar (1997) argue that improved asset management,

[19] Manesh (2012) finds that 81.2% of MLPs set forth mandatory distribution provisions in their operating agreements.

stemming from a reduction in the diversity of tasks required of managers, positively affects firm value. Moore et al (1989) finds that partnership agreements precisely set forth the scope of operations and business activities of the MLP, and Ciccotello and Muscarella (2001) show that MLPs benefit from these restrictions of scope. Ciccotello and Muscarella (2001) also point out that the frequency with which restrictions of scope are present in MLP operating agreements has decreased since 1987. This decrease, and its effect on share price reactions to MLP formation is part of the subject of this study.

The potential costs of MLP formation, as set forth by prior literature, are as follows:

Conflicts of Interest. The governance structure of MLPs make them uniquely susceptible to conflicts of interest between the parent corporation and the limited partners. The nature of these conflicts is described in detail throughout this study.

Administrative Costs. The tax compliance costs associated with administering an MLP are significant (Moore et al, 1989; Guenther, 1992). The first MLP, Apache Petroleum Company cited tax costs as a principal motivation for returning to the corporate form in 1988, with such conversion expected to reduce overhead costs by $4 million.

Negative Signaling from Equity Issuance. In the case of MLP carve-outs, in which external equity financing is sought, such financing may be seen as a negative signal of management's private information (Myers and Majluf, 1984; Dann and Mikkelson, 1984; among others).

CHAPTER III

HYPOTHESIS DEVELOPMENT

The organizational and governance structures of master limited partnerships make them uniquely susceptible to conflicts of interest. The general partner of the MLP is typically owned by the parent corporation, and the parent corporation typically appoints the general partner's management team and directors without a vote from the limited partners (Goodgame, 2005). This is partially by design, to concentrate control of the MLP in the GP, but is also a product of legal tradition, as the limited liability of limited partners could historically be compromised by participation in the management of the firm. Because MLPs formed by corporate parents generally operate in an industry which is either the same as, or related to, the industry in which the parent operates, this governance structure can lead to conflicts of interest.[20] Indeed, ratings agencies and the financial press have both highlighted the potential for abuse within the MLP-parent relationship. In July 2014, Moody's issued a report identifying MLPs as particularly risky to investors because of loose corporate governance standards and greater conflicts of interest.[21] In the wake of Enron's collapse, the Financial Times reported that consultants and analysts believed that parent corporations were taking advantage of their relationship with MLPs by overcharging them for risky assets, citing specifically the April 2002 sale by Williams Companies of $1 billion of pipeline assets to its MLP.[22]

[20] MLPs are surprisingly forthcoming about the potential for conflicts of interest to arise. See Appendix C for sample disclosures around conflicts of interest and their resolution.

[21] "Moody's: MLP's Corporate Governance Can Sideline Creditors." Moody's Investors Service Press Release. 7/22/2014.

[22] "Williams address concerns over MLPs." Financial Times. 11/18/2002.

These conflicts of interest are not a new phenomenon—Wolfson (1985) describes the misuse of subsidiaries' assets by parent companies of oil and gas partnerships in the 1970s and 80s—but may be exacerbated by changes in Delaware alternative entity law related to fiduciary duty. Specifically, Delaware law began permitting non-corporate entities to modify, and then to waive entirely, their fiduciary responsibility to unitholders in 1990 and 2004, respectively. Manesh (2012) finds that nearly all MLPs (~88 percent) in existence as of July 2011 take advantage of their ability to modify the GP's fiduciary responsibility, with roughly half waiving fiduciary duty altogether. That these modifications of fiduciary duty might allow the general partner to avail itself of certain opportunities to the detriment of limited partners is acknowledged in the operating agreements and annual reports of many MLPs. In its 2012 Form 10-K, Blueknight Energy Partners, L.P. states the following:

> *Our partnership agreement contains provisions that reduce the fiduciary standards to which our General Partner would otherwise be held by state fiduciary duty laws. For example, our partnership agreement…permits our General Partner to make a number of decisions in its individual capacity, as opposed to in its capacity as our General Partner. This entitles our General Partner to consider only the interests and factors that it desires, and it has no duty or obligation to give any consideration to any interest of, or factors affecting, us, our affiliates or any limited partner.*

This decreased fiduciary standard could embolden the general partner, and its parent corporation, to engage the assets of the MLP for its own accord, to the detriment of the limited partners. Such activities, though generally outlined in the risk disclosures of MLP operating agreements, prospectuses, and annual reports, could give rise to legal action, requiring costly resolution on the part of the general partner and the parent

corporation.[23] Indeed, according to Latham & Watkins LLP, claims by unitholders against MLPs have become a growing subject of litigation.[24] In sum, changes to Delaware law with respect to fiduciary duty likely increases the agency costs associated with MLP formations during the second wave.

Concurrent with the allowance of fiduciary duty modification in 1990 was the emergence of incentive distribution rights in the operating agreements of MLPs.[25] IDRs arose at least in part as a reaction to perceived abuses by general partners—such as inadequate disclosures of conflicts of interest and large up-front fees for MLP organizers—during the mid-1980s (Ciccotello and Muscarella, 2001). By tying the cash incentives of the general partner directly to the ongoing cash distributions to the limited partners, IDRs were believed to encourage focus on long-term cash flow maintenance and growth. However, a possible side effect of this tiered incentive structure is the diversion of cash away from necessary maintenance and capital expenditures, and towards maximizing the general partner's share of cash distributions. MLPs themselves are not bashful about the potential conflicts arising from incentive distribution rights, as described in the prospectus of Quest Energy Partners, L.P.:

> *Our general partner has incentive distribution rights entitling it to receive up to 23% of our cash distributions above certain target distribution levels in addition to its 2% general partner interest. This increased sharing in our*

[23] See, for example, *Allen v. Encore Energy Partners, L.P.*, No. 534-2012 (Del. July 22, 2013) and *Hite Hedge LP v. El Paso Corp.*, No. 7177-VCG, 2012 WL 4788658 (Del. Ch. Oct. 9, 2012), both of which employ fiduciary waivers; and *Brinckerhoff v. Enbridge Energy Co.*, No. 5526-VCN, 2011 WL 4599654 (Del. Ch. Sept. 30, 2011) and *Gerber v. Enterprise Products Holdings, LLC*, No. 5989-VCN, 2012 WL 34442 (Del. Ch. Jan. 6, 2012), which modify, but do not waive, fiduciary duty.

[24] See http://www.lw.com/mlp-Portal/caselaw

[25] See Appendix B for a sample incentive distribution provision.

distributions creates a conflict of interest for the general partner in determining whether to distribute cash to our unitholders or reserve it for reinvestment in the business and whether to borrow to pay distributions to our unitholders. Our general partner may have an incentive to distribute more cash than it would if its only economic interest in us were its 2% general partner interest. Furthermore, because of the commodity price sensitivity of our business, the general partner may receive incentive distributions due solely to increases in commodity prices as opposed to growth through development drilling or acquisitions.

On this subject, one analyst covering Kinder Morgan Energy Partners, L.P., the second largest oil and gas MLP, recently accused the firm of "starving" its assets of needed maintenance in order to maximize distributable cash.[26] Relatedly, Kinder Morgan is currently facing a shareholder lawsuit alleging that it has "allocate[d] cash flow for distributions in bad faith," taking $3.2 billion since 2010 through its incentive distribution rights which the suit alleges was needed for maintenance of the firm's pipeline assets.[27]

Because analyst reports and shareholder actions of this type are a new phenomenon—both gaining steam in 2013, after the MLP formations studied here—and because IDRs are historically thought to reduce agency costs by encouraging the timely distribution of cash, consistent with Jensen (1986), the market likely viewed IDRs not as enabling managerial shirking, but instead as minimizing agency costs. Although IDRs may be viewed as improving managerial stewardship and as increasing to future cash

[26] Driver, A. 9/10/2013. "Upstart analyst says Kinder 'starves' assets for investors." Reuters.

[27] Slotoroff v. Kinder Morgan Inc., CA9318, Delaware Chancery Court (Wilmington)

flows, the increased share of distributions allocated to the general partner by IDRs could also increase the cost of capital of the MLP and its parent company. In recent years, several MLPs have extinguished their IDRs, citing reducing cost of capital as a driving consideration for doing so.[28] Market response to the formation of an MLP is likely compounded by both the anticipated effects of such formation on future cash flows and on cost of capital. Given the rapid expansion of IDR use during the second wave, I expect that market participants viewed IDRs favorably, and that the market priced expected benefits to future cash flow over cost of capital considerations. Further, because IDRs present the parent corporation, as owner of the general partner interest, with a disproportionate share of the MLP's free cash flow, I expect that the emergence of the IDR has positive share price consequences to the parent corporation.[29]

Moore et al (1989) point to improved asset management, stemming from a reduction in the diversity of tasks required of managers, as a positive share price effect of master limited partnership formation. Comment and Jarrell (1995) and Daley, Mehrotra, and Sivakumar (1997) support the assertion that increased managerial focus positively affects firm value, and Ciccotello and Muscarella (2001) show that restrictions in operating scope are prevalent among operating agreements of first-wave MLPs. Specifically, they find that 69 percent of first wave MLPs formed between 1981 and 1986 contain such restrictions. However, they find that only 24% of MLPs formed between 1988 and 1995 have provisions in their partnership agreements which similarly restrict

[28] See "MLPs Rework GP Relationship to Lower Capital Costs." 9/15/2010. Energy Intelligence Finance, for descriptions on numerous IDR eliminations and restructurings.

[29] Nine firms extinguished IDRs during the sample period; however, only three of these had publicly-traded parents at the time of the extinguishment. As such, it is not feasible to isolate the share price effects of incentive distribution rights from other changes to the MLP environment. Anecdotal evidence from these limited observations reveals positive announcement period returns for two firms, and negative returns for one.

the scope of their operations. This suggests that the gains in efficiency of asset management observed during the first wave of MLPs may not persist through the second wave. Accordingly, I expect that the share price benefits associated therewith have also deteriorated, applying downward pressure on abnormal returns around MLP formation announcements during the second wave.

Despite the changes to the agency environment of MLPs during the 1990s and 2000s, and the potential decrease in operational focus during the same time period, MLPs could still be attractive to investors because they continue to offer avoidance of double taxation, reductions in free cash flow, signaling of private information, and potentially improved information flow, as articulated by Moore et al (1989). However, I expect that decreased fiduciary responsibility, the presence of IDRs, and decreased operational focus during the second wave of MLP formations will result in positive returns around MLP announcement which differ in magnitude from those observed by Moore et al (1989), and others, during the first wave. Because these structural changes are likely confounding, the direction of the change in magnitude, if any, is an empirical question.

There are two distinct conditions under which these structural changes may affect a positive adjustment in the value of MLP formation from the first to the second wave. First, if overall agency costs are increased, the ability of the parent company to exploit conflicts of interest may increase, with benefits accruing to the parent firm and its shareholders—through favorable allocations of cash flow or through self-dealing arrangements, for example—at the expense of the MLP's limited partners. If this effect outweighs any value-reduction from decreased managerial focus, the valuation effect of forming an MLP could be enhanced. Similarly, if agency costs are reduced by the

presence of fiduciary modification and IDRs, shareholders of the parent corporation would benefit from reduced litigation exposure—leading to higher announcement period returns. If one of these conditions holds, I expect to find support for the following hypothesis:

> **H1a:** Announcement period abnormal returns for the second wave of MLP formations are more positive than those for the first wave.

Similarly, two conditions exist under which the response to MLP formation in the second wave could be less positive than in the first wave. If, in forming an MLP, management is seen by investors as underestimating the potential costs of increased litigation stemming from MLP formation, and view such formation as an overall negative NPV action, announcement period returns could be decreased during the second wave. Second, if agency costs are reduced by the presence of fiduciary modification and IDRs, shareholders of the parent corporation may be disadvantaged by the parent's reduced ability to take advantage of conflicts of interest with the MLP—resulting in lower second wave announcement returns. A finding in support of the following hypothesis would provide evidence toward one of these conditions.

> **H1b:** Announcement period abnormal returns for the second wave of MLP formations are less positive than those for the first wave.

Subsequent hypotheses are aimed at parsing the two conditions underlying a finding in support of either H1a or H1b. That is, whether an increase or decrease in announcement returns is driven by the parent's relative ability to avail itself of conflicts of interest with the MLP, or by a change in litigation costs associated with structural changes in the MLP's agency environment. For the remainder of this study, I will refer to

these possibilities as “the conflicts of interest story” and “the litigation story,” respectively.

An increased potential for conflicts of interest likely affects different types of firms unequally. Wolfson (1985) describes how conflicts of interest may arise in oil and gas exploration partnerships, highlighting the ability of general partners to “prove-up” their own properties using the resources of the partnership. In this setting, general partners may adopt suboptimal drilling strategies in one partnership in order to acquire information useful for assessing the prospects of nearby drilling properties the GP holds on its own account, or through another partnership in which it has a more beneficial revenue sharing agreement. Wolfson (1985) presents the following excerpt from the prospectus of 1981-82 Damson Development Drilling Program prospectus:

> *Should a Partnership acquire or lease or participate in drilling or producing operations on a Prospect in proximity to that of the General Partner or its Affiliates, the results of such activity by the Partnership may gratuitously benefit the General Partner or its Affiliates…. [This may] result in profits to the General Partner or its Affiliates, and any such profits will not be paid to the partnership.*

Similar opportunities exist among MLPs involved in the exploration of oil and gas resources, and conflict of interest provisions contained within MLP formation documents do little to protect limited partners from the abuse of such opportunities by the general partner. MLPs not engaged in exploration activities also face conflicts of interest, stemming from pricing of related party transactions, competition between the MLP and the GP and its affiliates for acquisitions, disposition of free cash flow, and so on.

However, these conflicts are ubiquitous across MLPs, including those involved in oil and gas exploration. So, although the potential for conflicts of interest is present across MLPs, I expect that potential conflicts of interest are highest for firms involved in oil and gas exploration, as compared to firms operating in midstream sectors.

Whether the predicted increased instance of conflicts of interest in exploration MLPs has negative or positive share price effects to the parent corporation is an empirical question. On one hand, the parent company is benefitted, at the cost of limited partners, by the exploitation of the MLP's operating and financial assets. On the other, increased instance of conflicts of interest could result in increased litigation risk, the resolution of which is costly. Further, comparatively higher agency costs could increase the cost of capital of the parent company (Chen, Chen, and Wei, 2011). Accordingly, I set forth the following alternative hypotheses:

> **H2a:** If the conflicts of interest story holds, parent corporations announcing the formation of an exploration MLP will have more positive announcement period abnormal returns than firms forming non-exploration MLPs.
>
> **H2b:** If the litigation story holds, parent corporations announcing the formation of an exploration MLP will have less positive announcement period abnormal returns than firms forming non-exploration MLPs.

If changes to Delaware alternative entity law affect the agency costs associated with MLP formation, I expect that the allowance of full waiver of fiduciary duty beginning August 1, 2004 will influence announcement period returns by increasing agency costs. Accordingly, I partition second wave MLP formations into two groups—those formed prior to 2004, and those formed after 2004—and compare announcement

period returns. The predicted share price effect depends on investors' perceptions of the value relevance of increased agency costs in the context of MLP formation. With this in mind, I propose the following hypotheses:

> **H3a:** There will be a more positive market reaction to post-2004 formations if the conflicts of interest story holds.
>
> **H3b:** There will be a less positive market reaction to post-2004 formations if the litigation story holds.

Taking advantage of the increased sample size afforded by the second wave, I take a closer look at the prediction of Moore et al (1989) that the isolation of a subset of corporate assets through the formation of an MLP results in improved information flow and positive share price effects to the parent corporation. Subsequent literature supports this prediction in the context of corporate spin-offs, as Krishnaswami and Subramaniam (1999) find that firms with greater information asymmetry are more likely to engage in a spin-off, and that gains from spin-offs are positively related to prior levels of information asymmetry. However, recent studies suggest that, despite the potential improved information flow stemming from the isolation of a subset of assets, the increase in organizational complexity from the formation of an MLP could increase information asymmetry between management and investors. Chen, Hepfer, Quinn, and Wilson (2014) show that U.S. firms which engage in outbound income shifting experience higher levels of information asymmetry and lower levels of financial statement comparability. Similarly, Balakrishnan, Blouin, and Guay (2012) tie added organizational complexity stemming from tax planning activities to decreased transparency. To determine the impact of MLP formation on the information environment of the parent corporation, I

examine changes in the level of information asymmetry, measured by idiosyncratic return volatility and by price-scaled percentage bid-ask spreads, around MLP formation announcements. Because prior literature offers mixed evidence, I do not make a directional prediction on the relation between MLP formation and information asymmetry.

H4o: Information asymmetry is unaffected by the formation of a master limited partnership.

CHAPTER IV

SAMPLE AND DESCRIPTIVE STATISTICS

The sample of master limited partnerships and parent corporations is derived from several sources. 22 unique first wave MLP formations are identified by Moore et al (1989) and Martin and Kensinger (1990). One of these, McCormick Oil & Gas Partnership, does not have stock price data available through the *Center for Research on Securities Prices* (CRSP), and is excluded. A list of all MLPs formed between 1988 and 2011, of which there are 112, was obtained from *Alerian*[30], an independent provider of MLP data. Of these, 47 were determined, through a search of the *Security and Exchange Commission EDGAR Online* database and *Factiva*, to be formed from the assets of a publicly-traded corporate parent, and to have identifiable announcement dates in press releases or Forms 8-K. The resulting sample consists of 68 MLP formations from 1982 to 2011. Because prior literature reveals systematic valuation differences between publicly traded firms formed by spin-off and by carve-out—see Moore et al. (1989), Denning and Shastri (1993), and Michaely and Shaw (1995)—and because second wave MLPs are overwhelmingly formed by carve-out, I further limit the sample to carve-outs only, of which there are 12 in the first wave, and 45 in the second. The final sample is thus comprised of 57 MLP formations.

Table 1 (see Appendix D for all tables) presents the number of sample MLP formations by year and by industry. Panel A shows steady formation activity during the first wave, with a lull beginning in the late 1980s, persisting through the early 1990s. During the second wave, formations reached a local maximum in the years leading up to the financial crisis, with the crisis causing a temporary halt in MLP carve-outs. 2010 and

[30] See http://www.alerian.com/education/figures-and-tables/

2011 begin an upswing in MLP formations which persists through the time of this writing. Although this table only reflects MLPs formed by carve-out of corporate assets, the pattern of formations presented here closely resembles that of MLP formations by all means during the same period. Panel B of Table 1 presents the distribution of first and second wave sample firms across industries. The majority of first wave sample firms are engaged in oil & gas exploration, with the remaining four firms split between midstream energy and other industries. This is somewhat surprising, given the more volatile nature of exploration firms' cash flows, which is not traditionally thought to be well suited to the MLP organizational form. However, of the nine first wave formations which were formed by spin-off or by total conversion, and thus excluded from the sample, five operated midstream oil or natural gas assets. Second wave firms follow expectations more closely, with 27 firms in the midstream energy sector, and another 5 firms engaged in water transportation, which may include transportation of crude oil or liquefied natural gas. Five second wave MLPs operate in oil & gas exploration.

Table 2 describes characteristics of MLP formations and parent corporations during the first and second waves. First wave MLP formations are, on average, larger than second wave formations, when measured in proportion to the market value of the parent. First wave parent corporations also tend to retain a larger percentage ownership in the newly-formed MLP. However, neither of these differences is statistically significant at traditional levels. First and second wave parent firms are of comparable size, have similar leverage ratios, and experience similar operating performance in the year prior to MLP formation. Second wave parent companies have significantly higher market-to-book ratios, on average. However, this difference mirrors historical trends in market-to-book

ratios, which hovered around 1.5 in the mid-1980s and around 2.5 by the mid-2000s when many of the second wave sample firms were formed.

CHAPTER V

EMPIRICAL RESULTS

Market Reaction to MLP Formation

In primary testing, I analyze the market reaction to announcements of MLP formations. I examine the market reaction in both the 3-day and 5-day windows around the initial MLP announcement. Following the methodologies of Sikes, Tian, and Wilson (2014) and Kaniel, Liu, Saar, and Titman (2012), among others, I calculate the cumulative abnormal return (CAR) as the firm's cumulative return during the announcement window less the equal-weighted CRSP return over the same period.[31] Mean CAR is calculated for the first and second wave formation announcements separately. Sample differences between the two groups are computed, with a T-test applied to assess the statistical significance of any difference in mean CAR.[32]

Table 3 presents the results of this analysis. Panel A gives the market response to first wave MLP formations, showing positive abnormal returns of 0.15% (0.20%) during the 3-day (5-day) window surrounding the announcement of MLP formation. However, these returns are not statistically significant. This finding contradicts Moore et al. (1989), who document significantly positive mean 2-day announcement period returns of 2.41% for MLP carve-outs. This inconsistency appears to arise from differences in specifications

[31] Untabulated tests using value-weighted CRSP returns to compute CAR arrive at similar conclusions.

[32] A Welch-Aspin t test is used, as Levene tests reject the null hypothesis of equal variances across first and second wave CAR. The Levene test of variance equality is used because Shapiro-Wilk tests reveal non-normality in the sample CAR.

around computing event windows and abnormal returns.[33] Low power may also be a factor, given the small sample of first wave MLP carve-outs (12 firms).

Panel B reports the market reaction to second wave MLP formations. The results indicate a significant positive market reaction to the announcement of MLP formation during both the 3-day (2.99%) and 5-day (2.94%) event windows. Panel C reports the difference between second wave and first wave market reactions. For both the 3-day and 5-day event windows, the market reaction is more positive for second wave MLP formations, and the difference is statistically significant in both cases.

Table 4 presents the results of multivariate analysis of abnormal returns across the first and second waves. Martin and Kensinger (1990) find that the market response to MLP formation varies positively with the size of the MLP relative to the market value of the parent, and varies inversely with the proportion of MLP ownership retained by the parent. Accordingly, I include *REL_SIZE* and *RETAIN* as controls for each of these factors, respectively. *REL_SIZE* is computed as the total assets of the MLP scaled by the market value of equity of the parent corporation. Because forming corporations rarely disclose the precise value of assets to be carved-out into the MLP, perfect foresight is presumed. That is, the total book value of assets of the MLP is obtained from the MLP's first available balance sheet. *RETAIN* is computed as the proportion of ownership in the MLP retained by the parent after the IPO. When the percentage to be retained is disclosed along with the formation announcement, such disclosure is used. In other cases, perfect

[33] Moore et al (1989) measure abnormal returns using prediction errors computed with parameter estimates from market model regressions over a 200 trading day estimation window. Further, cumulative abnormal returns are calculated over a two-day window (day -1 & day 0) which does not capture post-announcement price reversion. In untabulated testing, I replicate Moore et al. (1989) with results matching theirs. Untabulated tests also reveal positive abnormal returns for a combined sample of all first wave MLP formations, irrespective of formation type, consistent with prior literature.

foresight is again presumed, and ownership information is acquired from the prospectus or from subsequent press releases.

Because tax rates on equity income fluctuated during the sample period, I also control for the changing valuation effect of avoiding double taxation. Ideally, separate controls for individual, corporate, and dividend tax rates would be included in the model to capture these tax effects. However, because tax legislation frequently increases or decreases these rates jointly, this results in severe multicollinearity (condition number of 245.6[34]).[35] I next explore a single variable amalgamating the three relevant rates, the after tax value of one dollar earned through a partnership less the after tax value of one dollar earned through a corporation (facing both corporate and dividend tax rates). This transformation mitigates, but does not alleviate, the multicollinearity problem, resulting in a condition number of 18.6. The failure of this specification appears related to the abrupt drop in the dividend tax rate—from 38.6 percent to 15 percent—in 2003, making it highly negatively correlated with the indicator variable for the second wave. Given these constraints, I control for the valuation effects of tax rates by including the control variable *TAX_DIFF*, which is computed as the difference between the corporate and individual tax rates. Because the tax rate on dividend income was decreased significantly during the second wave, its omission from the model can be expected to bias the

[34] Condition number refers to the square root of the ratio of the largest and smallest eigenvalue of X. A condition number in excess of 15 generally indicates some multicollinearity concern, while a condition number in excess of 30 indicates severe multicollinearity concern.

[35] Untabulated testing is robust to this specification in both sign and significance; however, coefficients on *SECOND_WAVE* are inflated beyond a reasonable range.

valuation effect of structural changes downward. The inclusion of controls reduces my sample by two observations, both during the first wave.[36, 37]

Panel A (Panel B) reports multivariate results using 3-day (5-day) CAR around MLP formation announcements. Consistent with the univariate results presented in Table 3, I find that 3-day (5-day) announcement returns are 3.90% (4.70%) higher during the second wave of MLP formations. Consistent with the findings of Christensen and Christensen (1991), and contrary to the findings of Martin and Kensinger (1990), I find positive and significant coefficients on *RETAIN* for both announcement windows, suggesting that the value of MLP formation to the parent is increasing in the proportion of ownership retained by the parent. The coefficients on *TAX_DIFF* and *REL_SIZE* are not significant in either panel.

The results in Tables 3 and 4 support H1a and reject H1b. That is, they are consistent with two potential *ex ante* investor beliefs: (1) overall agency costs are increased, enhancing the ability of the parent company to exploit conflicts of interest with the MLP, with benefits accruing to the parent firm's shareholders (the conflicts of interest story); or (2) agency costs are reduced by the presence of fiduciary modification and IDRs, and shareholders of the parent corporation benefit from reduced litigation exposure (the litigation story). Subsequent tests examine the market response to MLP formation in more detail, and may help distinguish between the two scenarios described above.

[36] Financial statement data could not be obtained for two first-wave MLPs: Enserch Exploration Partners, Ltd. & Entex Energy Development, Ltd.

[37] Additional controls, such as market-to-book ratio and dividend payout ratio, though not included in prior studies of MLP valuation, may be relevant to tests of H1. However, limitations on available financial data—such as book value data and commonly used dividend payout scalars—prevent their inclusion in this study.

Formation of Oil & Gas Exploration MLPs

To test H2, I partition the sample based on industry—whether the MLP is involved in oil & gas exploration and production (E&P) activities. Because the MLP operating structure is well suited to firms generating steady cash flows, most MLPs—particularly during the second wave—operate in the midstream sector, which is not as susceptible to commodity price risk as the upstream (E&P) sector. As a result, the sample of upstream, exploration firms is limited. Specifically, a total of 13 sample firms—8 first wave and 5 second wave—operate primarily in oil & gas exploration and production. I first compare the mean cumulative abnormal returns for first and second wave E&P MLP formation announcements. Table 5 details the results of this testing.

Panel A presents the market response to first wave E&P MLP formations, showing positive abnormal returns of 0.18% (1.10%) during the 3-day (5-day) announcement window; though these returns are not statistically significant. Panel B reports a significant positive market reaction to the announcement of E&P MLP formation during both the 3-day (10.81%) and 5-day (11.93%) event windows. Panel C reports that the 3-day (5-day) announcement period CAR for second wave formations is 10.63% (10.83%) higher than for first wave formations, and that despite the small sample and the resultant low power of the tests, this difference is statistically significant.

The results of Table 5 suggest that formations of MLPs engaged in oil & gas exploration benefitted, perhaps disproportionately, from structural changes between the first and second waves. To examine this more directly, I perform a multivariate analysis of the differential impact of forming an E&P MLP across the first and second waves, estimating the following regression:

$$CAR = \alpha_0 + \alpha_1 SEC\_WAVE + \alpha_2 EXPLORE + \alpha_3 SEC\_WAVE \text{ x } EXPLORE + \alpha_4 TAX\_DIFF + \alpha_5 REL\_SIZE + \alpha_6 RETAIN + \varepsilon \quad (1)$$

where *SEC_WAVE* is an indicator variable equal to one if the MLP was formed during the second wave; zero otherwise. *EXPLORE* is an indicator variable equal to one if the MLP is engaged in exploration and production; zero otherwise. The results of this analysis are given in Table 6, with 3-day (5-day) announcement period *CAR* analyzed in Panel A (Panel B). The findings in column 1—which excludes control variables—are mixed, with Panel A pointing to E&P formations as drivers of the increased valuation of MLPs during the second wave, as only the interaction term has a significantly positive coefficient. Panel B, on the other hand, reports a significantly positive coefficient on *SEC_WAVE* and a positive coefficient on the interaction term, though the latter falls just short of statistical significance. After controlling for factors related to tax rates, MLP size, and retained ownership, the increased valuation of E&P MLPs during the second wave becomes more pronounced, with positive and significant coefficients only for the interaction term. As in Table 4, the coefficients on *RETAIN* are positive and significant.

Taken together, the results presented in Tables 5 and 6 provide support for H2a and reject H2b. Specifically, Table 5 reports that the market response to parent corporations forming MLPs engaged in oil & gas exploration were significantly higher during the second wave of MLP formations than during the first, both economically and statistically. Further, Table 6 presents evidence that parents forming exploration MLPs benefitted more from the structural changes to the MLP environment than did parents forming non-exploration MLPs, in terms of the market's response to their formation

announcements. This suggests that shareholders of parent corporations expect that the parent could benefit from conflicts of interest with the MLP.

Fiduciary Waiver and Market Reaction to MLP Formation

If changes to Delaware alternative entity law affect the agency costs associated with MLP formation, the allowance of full waiver of fiduciary duty beginning August 1, 2004 will influence announcement period returns by increasing agency costs. Unlike the allowance of fiduciary modification in 1990, this change to Delaware law was not accompanied by a change in MLP incentive structure (i.e. incentive distribution rights). Accordingly, by partitioning second wave MLP formations around the law change and comparing announcement period returns, the valuation effects of changes in agency costs, as set forth in H3a and H3b, can be more clearly evaluated.

Because the Act allowing fiduciary waiver was approved on June 24, 2004 and debated for some time prior, I eliminate MLPs announced during 2004 from this analysis, as it is unclear whether investors might anticipate the possibility of fiduciary waiver for these firms. I also exclude first wave formations from this analysis in the interest of comparability between groups. The resulting sample consists of 42 second wave MLP formations, of which 19 (23) are formed before (after) the allowance of fiduciary waiver.

Table 7 presents the results of this analysis, with Panel A and Panel B reporting 3-day and 5-day announcement period abnormal returns, respectively. In univariate testing—reported in column 1—3-day (5-day) *CAR* is 3.9% (4.5%) higher during the post-fiduciary waiver period (significant at the 5 percent level). When controls are included,[38] positive coefficients on *POST_WAIVER* persist in both panels, but, perhaps

[38] *TAX_DIFF* is excluded from this model due to a lack of variation during the post-waiver period

due to the reduced sample size, statistical significance is lost in two-tailed testing (p-value of 0.163 using 3-day *CAR*).

The results of Table 7 provide weak support for H3a. The increase in announcement period returns after the allowance of fiduciary waiver, reported in column 1, supports the assertion that shareholders of parent corporations expect to benefit from the parent's increased ability to take advantage of conflicts of interest with the MLP. However, care should be used when interpreting this finding, as it is confounded by the impact of exploration activities on market response. That is, all five oil & gas exploration firms formed during the second wave are formed in 2005 or later—after the passage of full fiduciary waiver. When these firms are removed, tests of mean *CAR* (untabulated) reveal a difference between post- and pre-waiver firms of 2.27% (2.56%) during the 3-day (5-day) announcement window, but these differences fall short of traditional levels of statistical significance. While this lends reason for skepticism, it is possible that the change in Delaware law to allow fiduciary waiver was a factor in the decision of these firms to form exploration MLPs. Indeed, 3 of the 4 forming corporations included a fiduciary waiver in the partnership agreements of their newly-formed exploration MLPs.[39]

Supplemental Testing

MLPs and their corporate parents are primarily clustered in the energy sector, particularly during the second wave. The boom in U.S. energy production and transportation during the last two decades caused stock returns in the energy sector to frequently outperform that of market as a whole. Because of this, it is possible that the increase in abnormal returns from the first to the second wave documented in the

[39] One firm, Atlas America, Inc., formed two of the E&P MLPs during the post-waiver period.

previous subchapter may be biased upwards. With this in mind, I repeat the testing described earlier with cumulative abnormal returns now computed using returns on industry-size matched portfolios in place of equal-weighted market returns. Industry-size returns are calculated from portfolios based on terciles of market value of equity and three-digit SIC codes. Where the intersection of these groups includes fewer than five unique firms, I use two-digit SIC codes. If a size-industry group using two-digit SIC codes has fewer than 5 unique observations, one-digit SIC codes are used to construct the portfolio return.

In untabulated testing, I find results which are generally consistent with those presented above. Specifically, in multivariate tests of H1, I find that second wave MLP formation announcements enjoy 3-day (5-day) abnormal returns which are 3.76% (4.20%) higher than first wave formation announcements. In tests of H2, I again find support for E&P MLP formations as drivers of the increase in *CAR* from the first wave to the second, though this result is statistically significant only when using a 3-day announcement window. In tests of H3, I continue to find a positive coefficient on POST_WAIVER, but again fall just short of statistical significance in two-tailed testing—p-values of 0.119 and 0.169 using 3-day and 5-day announcement windows, respectively.

MLP Formation and Information Asymmetry

In tests of H4, I examine the effect of forming an MLP on information asymmetry between parent corporation management and outside shareholders. Following Chen et al (2014), I measure information asymmetry using both idiosyncratic return volatility (*IDVOL*) and price-scaled percentage bid-ask spreads (*SPREAD*). Similar to Ang, et al

(2006), I compute *IDVOL* as the standard deviation of the residual from firm-specific regressions of daily returns on the three Fama-French (1993) factors over 200-trading-day pre- and post-MLP formation announcement estimation windows, multiplied by 100. For each MLP formation, the pre-formation window spans days *t-209* through *t-10*, and the post-formation window spans days *t+10* through *t+209*. In univariate testing, a t-test is used to determine the statistical significance of any difference between pre- and post-announcement period *IDVOL*. Next, I perform multivariate analysis by estimating the following regression equation:

$$IDVOL = \alpha_0 + \alpha_1 POST\_MLP + \alpha_2 SIZE + \alpha_3 LEVERAGE + \alpha_4 LOSS + \alpha_5 MB + \alpha_6 VOLUME + \alpha_7 SD\_VOL + \alpha_8 AGE + \alpha_9 SD\_REV + \varepsilon \quad (2)$$

where *POST_MLP* equals one if the observation is after MLP formation, zero otherwise; *SIZE* is the natural logarithm of lagged total assets; *LEVERAGE* is lagged total debt scaled by lagged total assets; *LOSS* equals one if the firm incurred a pre-tax loss during the current year, zero otherwise; *MB* is the market to book ratio; *VOLUME* is the natural logarithm of the average trading volume over the estimation window; *SD_VOL* is the natural logarithm of the average daily trading volume, in hundreds, for firm *i* over the estimation window; *AGE* is the natural logarithm of the time firm *i* has been listed in Compustat; and *SD_REV* is the standard deviation of annual revenues over the four-year window ending in time t, scaled by total assets. I also include year fixed-effects and cluster standard errors by industry, using two-digit SIC codes.

Table 8 presents the results of this analysis. Panel A gives the difference in mean idiosyncratic return volatility before and after the announcement of MLP formation. Because tests of H4 are not restricted to MLPs formed via carveout, univariate tests

include 65 MLP formations, with 3 observations lost due to CRSP data unavailability. I find that mean idiosyncratic return volatility is roughly 1.8 percent lower during the 200 trading day period after MLP formation than during the same period prior to formation. However, this difference is not statistically significant at traditional levels. Panel B reports the results of estimating equation (2). Here, the sample is further reduced to 58 firms (116 observations) as a result of limited Compustat coverage. The coefficient on *POST_MLP* is negative and statistically significant, suggesting that, when controlling for other contributing factors, MLP formation appears to reduce information asymmetry within parent corporations. This supports the notion that MLP formations, like other corporate spin-offs, reveal information about segregated assets which was previously unknown to shareholders, as in Krishnaswami and Subramaniam (1999), and that this effect outweighs any potential increase in organizational complexity. Consistent with intuition, the coefficients on *LEVERAGE, VOLUME, and SD_REV* are positive and significant, and the coefficient on *SIZE* is negative and significant.

I further test H4 using price-scaled percentage bid-ask spread (*SPREAD*) as a proxy for information asymmetry. Similar to Chen, et al (2014), I compute *SPREAD* as the average bid-ask spreads for firm *i* over two one-year periods—the first ending on the day prior to the announcement of MLP formation, and the second beginning on the day after the announcement date—scaled by stock price and multiplied by 100. In univariate testing, a t-test is used to determine the statistical significance of any difference between pre- and post-announcement period *SPREAD*. Next, I perform multivariate analysis by estimating the following regression equation:

$$SPREAD = \alpha_0 + \alpha_1 POST\_MLP + \alpha_2 SIZE + \alpha_3 LEVERAGE + \alpha_4 LOSS + \alpha_5 MB +$$

$$\alpha_6 VOLUME + \alpha_7 SD\_VOL + \alpha_8 AGE + \alpha_9 SD\_RET + \alpha_{10} SD\_REV + \varepsilon \quad (3)$$

where controls are defined as in equation (2), with the addition of SD_RET, which is computed as the standard deviation of daily stock returns for firm *i* over the estimation window. I once again include year fixed-effects and cluster standard errors by industry, using two-digit SIC codes.

Table 9 presents the results of this analysis. Panel A gives the difference in mean bid-ask spread before and after the announcement of MLP formation. Sample size is reduced to 44 firms as a result of inconsistent bid and ask data in CRSP, particularly before 1993. I find that mean bid-ask spread is roughly 12 percent lower during the one year period after MLP formation than during the same period prior to formation. However, this difference is not statistically significant at traditional levels. Panel B reports the results of estimating equation (3). Here, the sample is further reduced to 39 firms (78 observations) by Compustat data availability. The coefficient on *POST_MLP* is negative but insignificant, suggesting that MLP formation does not appear to influence bid-ask spreads of parent corporations. Surprisingly, none of the coefficients on the set of controls are significant, suggesting that the test's power may not be sufficient as a result of the small sample size.

CHAPTER VI

CONCLUSION

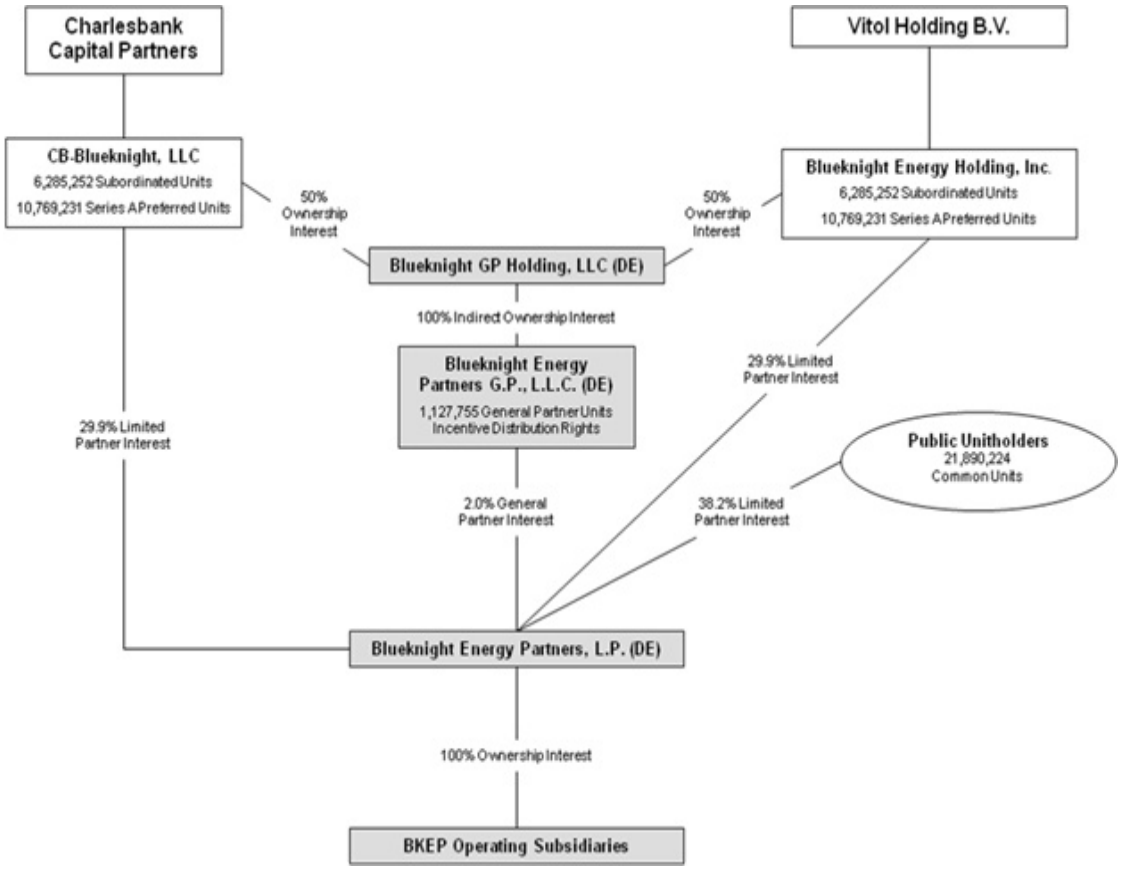
This study examines the effect of structural differences between first and second wave MLPs on the share price response to MLP formation announcements. These changes include the allowance of modifications to fiduciary responsibility under Delaware partnership law, beginning in 1990; the popularization of incentive distribution rights during the 1990s; and the decreased use of scope restrictions within MLP partnership agreements beginning in the late 1980s. I document significantly higher 3-day and 5-day announcement period returns for second wave MLP formations, suggesting that changes to the MLP agency and operating environments have enhanced the value impact of MLP formation. I also find support for the assertion that parent corporations benefit from conflicts of interest with the MLP. Specifically, I show that the positive valuation effect of structural changes is focused among firms having comparatively high agency costs, and find some evidence that the allowance of full fiduciary waiver under Delaware law positively impacted the market response to MLP formations. This is consistent with investors in parent corporations expecting, *ex ante*, that increased agency costs enhance the ability of the parent company to exploit conflicts of interest with the MLP. Finally, I examine the prediction of prior literature that the isolation of a subset of corporate assets through the formation of an MLP results in improved information flow and positive share price effects to the parent corporation, finding support for this prediction in the form of reduced idiosyncratic return volatility after MLP formations.

Master limited partnerships provide a useful setting in which to examine a variety of topics which are of general interest to accounting and finance researchers. Because

Delaware law grants contractual freedom over many aspects of firm governance, and because MLPs are publicly traded, we can observe specific governance provisions which are absent from corporate entities, and unobservable in privately-held partnerships. As such, researchers may benefit from the MLP setting in better understanding the role of governance in firm policies around payout, accounting quality, and capital structure, among others. Further, as non-corporate entities become an increasingly important part of the U.S. economy, the study of MLPs could provide researchers with valuable insight into organizational forms for which financial data is not generally publicly available.

APPENDIX A

ORGANIZATIONAL CHART – BLUEKNIGHT ENERGY PARTNERS, L.P.



APPENDIX B

SAMPLE INCENTIVE DISTRIBUTION –

SECTION 5.4 OF THIRD AMENDED AND RESTATED AGREEMENT OF LIMITED

PARTNERSHIP OF KINDER MORGAN ENERGY PARTNERS, L.P.

5.4 DISTRIBUTIONS OF CASH FROM OPERATIONS. An amount equal to 100% of Available Cash with respect to any calendar quarter that is deemed to be Cash from Operations pursuant to the provisions of Section 5.3 or 5.5 shall be distributed in accordance with Section 5.7(a) as follows, except as otherwise required by Section 4.1(c) in respect of additional Partnership Securities issued pursuant thereto:

(a) First, 99% to all Limited Partners, Pro Rata, and 1% to the General Partner until there has been distributed in respect of each Unit Outstanding as of the last day of such quarter an amount equal to the Minimum Quarterly Distribution;

(b) Second, 99% to all Limited Partners, Pro Rata, and 1% to the General Partner until there has been distributed in respect of each Unit Outstanding as of the last day of such quarter an amount equal to the excess of the First Target Distribution over the Minimum Quarterly Distribution;

(c) Third, 85.8673% to all Limited Partners, Pro Rata, and 14.1327% to the General Partner until there has been distributed in respect of each Unit Outstanding as of the last day of such quarter an amount equal to the excess of the Second Target Distribution over the First Target Distribution:

(d) Fourth, 75.7653% to all Limited Partners, Pro Rata, and 24.2347% to the General Partner until there has been distributed in respect of each Unit Outstanding as of the last day of such quarter an amount equal to the excess of the Third Target Distribution over the Second Target Distribution; and

(e) Thereafter, 50.5102% to all Limited Partners, Pro Rata, and 49.4898% to the General Partner;

provided, however, if the Minimum Quarterly Distribution, the First Target Distribution, the Second Target Distribution and the Third Target Distribution have been reduced to zero pursuant to the second sentence of Section 5.6, the distributions of Available Cash that is deemed to be Cash from Operations with respect to any quarter will be made solely in accordance with Section 5.4(e).

APPENDIX C

EXCERPT FROM 2012 FORM 10-K OF

BLUEKNIGHT ENERGY PARTNERS, L.P.

Risks Inherent in an Investment in Us

Vitol and Charlesbank control our General Partner, which has sole responsibility for conducting our business and managing our operations. Our General Partner has conflicts of interest with us and limited fiduciary duties, which may permit it to favor its own interests to the detriment of our unitholders.

Vitol and Charlesbank own and control our General Partner. Some of our General Partner's directors are directors and officers of Vitol or Charlesbank. Therefore, conflicts of interest may arise between our General Partner, on the one hand, and us and our unitholders, on the other hand. In resolving those conflicts of interest, our General Partner may favor its own interests and the interests of its affiliates over the interests of our unitholders. Although the conflicts committee of the board of directors of our General Partner (the "Board") may review such conflicts of interest, the Board is not required to submit such matters to the conflicts committee. These conflicts include, among others, the following situations:

- neither our partnership agreement nor any other agreement requires our General Partner, Vitol or Charlesbank to pursue a business strategy that favors us. Such persons may make these decisions in their best interest, which may be contrary to our interests;
- our General Partner is allowed to take into account the interests of parties other than us, such as Vitol, Charlesbank and their affiliates, in resolving conflicts of interest;
- if we do not have sufficient available cash from operating surplus, our General Partner could cause us to use cash from non-operating sources, such as asset sales, issuances of securities and borrowings, to pay distributions, which means that we could make distributions that deteriorate our capital base and that our General Partner could receive distributions on its incentive distribution rights to which it would not otherwise be entitled if we did not have sufficient available cash from operating surplus to make such distributions;
- Vitol and Charlesbank are holders of our Preferred Units and may favor their interests in actions relating to such units, including causing us to make distributions on such units even if no distributions are made on the common units;
- Vitol and Charlesbank may compete with us, including with respect to future acquisition opportunities (either through Development Company or otherwise);
- Vitol and Charlesbank may favor their own interests in proposing the terms of any acquisitions we make directly from them or from Development Company, and such terms may not be as favorable as those we could receive from an unrelated third party;
- our General Partner has limited its liability and reduced its fiduciary duties and has

also restricted the remedies available to our unitholders for actions that, without the limitations, might constitute breaches of fiduciary duty;

- our General Partner determines the amount and timing of asset purchases and sales, borrowings, issuance of additional partnership securities and reserves, each of which can affect the amount of cash that is distributed to unitholders;
- our General Partner determines the amount and timing of any capital expenditures and whether a capital expenditure is a maintenance capital expenditure, which reduces operating surplus, or an expansion capital expenditure, which does not reduce operating surplus. This determination can affect the amount of cash that is distributed to our unitholders;
- our General Partner may make a determination to receive a quantity of our Class B units in exchange for resetting the target distribution levels related to its incentive distribution rights without the approval of the conflicts committee of our General Partner or our unitholders;
- our General Partner determines which costs incurred by it and its affiliates are reimbursable by us;
- our partnership agreement does not restrict our General Partner from causing us to pay it or its affiliates for any services rendered to us or entering into additional contractual arrangements with any of these entities on our behalf;
- our General Partner intends to limit its liability regarding our contractual and other obligations and, in some circumstances, is entitled to be indemnified by us;
- our General Partner may exercise its limited right to call and purchase common units if it and its affiliates own more than 80% of the common units;
- our General Partner controls the enforcement of obligations owed to us by our General Partner and its affiliates; and
- our General Partner decides whether to retain separate counsel, accountants or others to perform services for us.

Our partnership agreement limits our General Partner's fiduciary duties to holders of our units and restricts the remedies available to holders of our units for actions taken by our General Partner that might otherwise constitute breaches of fiduciary duty.

Our partnership agreement contains provisions that reduce the fiduciary standards to which our General Partner would otherwise be held by state fiduciary duty laws. For example, our partnership agreement:

- permits our General Partner to make a number of decisions in its individual capacity, as opposed to in its capacity as our General Partner. This entitles our General Partner to consider only the interests and factors that it desires, and it has no duty or obligation to give any consideration to any interest of, or factors affecting, us, our affiliates or any limited partner. Examples include the exercise of its right to receive a quantity of our Class B units in exchange for resetting the target distribution levels related to its incentive distribution rights, the exercise of its limited call right, the exercise of its rights to transfer or vote the units it owns, the

exercise of its registration rights and its determination whether or not to consent to any merger or consolidation of the partnership or amendment to the partnership agreement;

- provides that our General Partner will not have any liability to us or our unitholders for decisions made in its capacity as a general partner so long as it acted in good faith, meaning it believed the decision was in the best interests of our partnership;
- generally provides that affiliated transactions and resolutions of conflicts of interest not approved by the conflicts committee of the Board acting in good faith and not involving a vote of unitholders must be on terms no less favorable to us than those generally being provided to or available from unrelated third parties or must be "fair and reasonable" to us, as determined by our General Partner in good faith. In determining whether a transaction or resolution is "fair and reasonable," our General Partner may consider the totality of the relationships between the parties involved, including other transactions that may be particularly advantageous or beneficial to us;
- provides that our General Partner and its officers and directors will not be liable for monetary damages to us, our limited partners or assignees for any acts or omissions unless there has been a final and non-appealable judgment entered by a court of competent jurisdiction determining that our General Partner or its officers and directors acted in bad faith or engaged in fraud or willful misconduct or, in the case of a criminal matter, acted with knowledge that the conduct was criminal; and
- provides that in resolving conflicts of interest, it will be presumed that in making its decision our General Partner acted in good faith, and in any proceeding brought by or on behalf of any limited partner or us, the person bringing or prosecuting such proceeding will have the burden of overcoming such presumption.

By purchasing a common unit, a common unitholder will become bound by the provisions in the partnership agreement, including the provisions discussed above.

Holders of our Preferred Units and common units have limited voting rights and are not entitled to elect our General Partner or its directors.

Unlike the holders of common stock in a corporation, unitholders have only limited voting rights on matters affecting our business and, therefore, limited ability to influence management's decisions regarding our business. Unitholders did not elect our General Partner or the Board and have no right to elect our General Partner or the Board on an annual or other continuing basis. The Board is chosen by Vitol and Charlesbank. Furthermore, if the unitholders are dissatisfied with the performance of our General Partner, they have little ability to remove our General Partner. Amendments to our partnership agreement may be proposed only by or with the consent of our General Partner. As a result of these limitations, the price at which the common units will trade could be diminished because of the absence or reduction of a takeover premium in the trading price.

Control of our General Partner may be transferred to a third party without unitholder consent.

Our General Partner may transfer its general partner interest to a third party in a merger or in a sale of all or substantially all of its assets without the consent of the unitholders. Furthermore, our partnership agreement does not restrict the ability of Vitol and Charlesbank, the owners of our General Partner, from transferring all or a portion of their ownership interest in our General Partner to a third party. The new owner of our General Partner would then be in a position to replace the Board and officers of our General Partner with its own choices and thereby influence the decisions made by the Board and officers.

APPENDIX D

TABLES

Table 1
Distribution of final sample of MLP formations.

Panel A: Distribution by year

Calendar year	MLP formations	Calendar year	MLP formations
1983	1	1998	2
1984	2	1999	1
1985	5	2000	2
1986	2	2001	3
1987	2	2002	1
1988	1	2003	0
1989	2	2004	3
1990	0	2005	3
1991	1	2006	7
1992	1	2007	8
1993	0	2008	0
1994	1	2009	0
1995	1	2010	1
1996	3	2011	4
1997	0		
		Total	57

Panel B: Distribution by industry

Industry type	First wave	Second wave
Chemicals	0	1
Midstream – Oil (crude & refined)	1	13
Midstream – Natural gas	1	14
Oil & gas exploration	8	5
Petroleum refining	0	1
Propane retail sales	0	2
Water transportation	0	5
Other	2	4
Total	12	45

MLP industries are determined through a review of Annual Reports, Registration Statements, and press releases, as Standard Industrial Classification (SIC) codes are frequently unreliable when distinguishing between operational sectors within the oil & gas industry. First wave MLPs formed by spin-off or total conversion operate in additional industries, including timber services, real estate development, and residential cleaning services.

Table 2
Descriptive statistics

Panel A: Summary statistics for first wave sample

Variable	N	Mean	Median	Std. Dev.	Q1	Q3
REL_SIZE	12	1.38	0.69	1.81	0.20	1.67
RETAIN	12	0.72	0.85	0.29	0.57	0.90
SIZE	10	8.08	8.11	1.09	7.26	9.23
LEVERAGE	10	0.31	0.23	0.18	0.16	0.43
ROA	10	0.04	0.05	0.06	0.05	0.06
MTB	10	1.14	1.16	0.38	0.83	1.45

Panel B: Summary statistics for second wave sample

Variable	N	Mean	Median	Std. Dev.	Q1	Q3
REL_SIZE	45	0.45	0.21	0.76	0.06	0.57
RETAIN	45	0.58	0.60	0.19	0.49	0.71
SIZE	42	7.88	7.64	1.64	6.63	9.25
LEVERAGE	42	0.38	0.35	0.18	0.23	0.49
ROA	42	0.03	0.03	0.06	0.01	0.07
MTB	42	2.29**	2.08	2.69	1.27	2.67

All variables are measured at the end of the fiscal year prior to the announcement of MLP formation. *REL_SIZE* is the size of the MLP (total assets) relative to the size of the parent (market value of equity). *RETAIN* is the percentage ownership in the MLP retained by the parent corporation. SIZE equals the log of total assets. LEVERAGE is the ratio of total debt to total assets. ROA is earnings before taxes divided by total assets. MTB is the market-to-book ratio of equity. Five sample firms did not have Compustat data (two first wave and three second wave), and are excluded here; these firms are included in subsequent testing that does not require Compustat data. Six parent firms form multiple MLPs during the sample period—two apiece—and are each included twice in the above analysis, with data drawn from the appropriate time period for each formation.

** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.

Table 3
Cumulative abnormal return (*CAR*) around announcement of MLP formations.

Panel A: *CAR* for first-wave MLP formations.				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	12	0.15%	0.14	0.890
(-2, 2)	12	0.20%	0.19	0.850
Panel B: *CAR* for second-wave MLP formations.				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	45	2.99%	3.07	0.004
(-2, 2)	45	2.94%	2.73	0.009
Panel C: Sample differences between second- and first-wave MLP formations.				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	57	2.84%	1.94	0.061
(-2, 2)	57	2.74%	1.84	0.074

CAR = cumulative abnormal return, defined as return (ret) – equal weighted CRSP return (ewrtd). The event date (day zero) is the date on which the parent corporation announces its plans to form an MLP. The sample of first-wave and second-wave formation includes only MLPs formed by a public issue carve-out of corporate assets, and does not include those formed by spin-off. The T-test of sample difference is based on the assumption that variances are different across the two samples. Reported p-values are based on a two-tailed test.

Table 4
Multivariate analysis of *CAR* around announcements of MLP formations.

Panel A: Three-day *CAR* around MLP formation announcement (-1, 1)			
Intercept	Coefficient	t-Statistic	p-Value
SEC_WAVE	0.039**	2.14	0.038
TAX_DIFF	0.003	0.02	0.987
REL_SIZE	0.001	0.22	0.826
RETAIN	0.054*	1.72	0.092
N		55	
R-squared		6.64%	
Panel B: Five-day *CAR* around MLP formation announcement (-2, 2)			
Intercept	Coefficient	t-Statistic	p-Value
SEC_WAVE	0.047**	2.14	0.037
TAX_DIFF	-0.236	-1.14	0.260
REL_SIZE	0.001	0.25	0.806
RETAIN	0.103**	2.33	0.024
N		55	
R-squared		14.34%	

The dependent variable in Panel A (B) is announcement firm cumulative abnormal return (*CAR)* over the 3-day (5-day) window around the announcement of MLP formation *CAR* = return (ret) – equal weighted CRSP return (ewrtd). *SEC_WAVE* equals one if the formation takes place during the second wave; zero otherwise. *TAX_DIFF* equals the difference between the corporate tax rate and the individual tax rate at the time of MLP formation. *REL_SIZE* is the size of the MLP (total assets) relative to the size of the parent (market value of equity). *RETAIN* is the percentage ownership in the MLP retained by the parent corporation. Coefficient estimates, t-statistics, and p-values are computed using robust standard errors clustered by firm, and are based on two-tailed tests.

** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.

* Indicates that the difference is statistically significant at the 10% level, using a two-tailed test.

Table 5
Cumulative abnormal return (*CAR*) for oil & gas exploration MLP formations.

Panel A: *CAR* for first wave oil & gas exploration MLP formations				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	8	0.18%	0.14	0.891
(-2, 2)	8	1.10%	0.86	0.418
Panel B: *CAR* for second wave oil & gas exploration MLP formations				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	5	10.81%	2.38	0.076
(-2, 2)	5	11.93%	2.82	0.048
Panel C: Sample differences between second- and first-wave MLP formations				
Window	N	*CAR*	t-Statistic	p-Value
(-1, 1)	13	10.63%	2.26	0.077
(-2, 2)	13	10.83%	2.45	0.061

CAR = cumulative abnormal return, defined as return (ret) – equal weighted CRSP return (ewrtd). The event date (day zero) is the date on which the parent corporation announces its plans to form an MLP. The sample of first-wave and second-wave formations include only oil & gas exploration MLPs formed by a public issue carve-out of corporate assets, and does not include those formed by spin-off. The T-test of sample difference is based on the assumption that variances are different across the two samples. Reported p-values are based on a two-tailed test.

Table 6
Multivariate analysis of *CAR* for oil & gas exploration MLP formations.

Panel A: Exploration versus non-exploration MLP formations across waves (-1, 1)

Variable	(1)	(2)
SEC_WAVE	0.019	0.018
	(0.413)	(0.496)
EXPLORE	0.001	-0.019
	(0.976)	(0.554)
SEC_WAVE x EXPLORE	0.087*	0.104**
	(0.084)	(0.042)
TAX_DIFF		0.123
		(0.509)
REL_SIZE		0.001
		(0.898)
RETAIN		0.041
		(0.201)
N	57	55
R-squared	19.88%	21.65%

Panel B: Exploration versus non-exploration MLP formations across waves (-2, 2)

Variable	(1)	(2)
SEC_WAVE	0.034*	0.031
	(0.052)	(0.333)
EXPLORE	0.027	-0.010
	(0.154)	(0.739)
SEC_WAVE x EXPLORE	0.074	0.100**
	(0.103)	(0.044)
TAX_DIFF		-0.119
		(0.591)
REL_SIZE		0.002
		(0.793)
RETAIN		0.085**
		(0.041)
N	57	55
R-squared	21.68%	28.46%

The dependent variable in Panel A (B) is announcement firm cumulative abnormal return (*CAR)* over the 3-day (5-day) window around the announcement of MLP formation *CAR* = return (ret) – equal weighted CRSP return (ewrtd). *SEC_WAVE* equals one if the formation takes place during the second wave; zero otherwise. *EXPLORE* equals one if the MLP being formed is engaged in oil & gas exploration; zero otherwise. *TAX_DIFF* equals the difference between the corporate tax rate and the individual tax rate at the time of MLP formation. *REL_SIZE* is the size of the MLP (total assets) relative to the size of the parent (market value of equity). *RETAIN* is the percentage ownership in the MLP retained by the parent corporation. Coefficient estimates and p-values (in parentheses) are computed using robust standard errors clustered by firm, and are based on two-tailed tests.

** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.

* Indicates that the difference is statistically significant at the 10% level, using a two-tailed test.

Table 7
Cumulative abnormal return (*CAR*) around fiduciary waiver allowance.

Panel A: Three-day *CAR* around MLP formation announcement (-1, 1)		
Variable	(1)	(2)
POST_WAIVER	0.039**	0.041
	(0.031)	(0.163)
REL_SIZE		0.019*
		(0.095)
RETAIN		0.029
		(0.613)
N	42	42
R-squared	9.98%	15.38%
Panel B: Five-day *CAR* around MLP formation announcement (-2, 2)		
Variable	(1)	(2)
POST_WAIVER	0.045**	0.032
	(0.030)	(0.270)
REL_SIZE		0.021
		(0.150)
RETAIN		0.102*
		(0.077)
N	42	42
R-squared	10.63%	20.67%

The dependent variable in Panel A (B) is announcement firm cumulative abnormal return (*CAR)* over the 3-day (5-day) window around the announcement of MLP formation *CAR* = return (ret) – equal weighted CRSP return (ewrtd). *POST_WAIVER* equals one if the formation takes place after 2004; zero otherwise. *REL_SIZE* is the size of the MLP (total assets) relative to the size of the parent (market value of equity). *RETAIN* is the percentage ownership in the MLP retained by the parent corporation. Coefficient estimates and p-values (in parentheses) are computed using robust standard errors clustered by firm, and are based on two-tailed tests.

** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.

* Indicates that the difference is statistically significant at the 10% level, using a two-tailed test.

Table 8
MLP formation and idiosyncratic return volatility (*IDVOL*).

Panel A: Mean *IDVOL* before and after MLP formation

Window	N	*IDVOL*	t-Statistic	p-Value
Pre-MLP	65	2.218	23.06	0.000
Post-MLP	65	2.178	21.11	0.000
Difference	130	0.040	0.286	0.776

Panel B: Multivariate analysis of *SPREAD* around MLP formations

	Coefficient	t-Statistic	p-Value
POST_MLP	-0.164**	-2.19	0.041
SIZE	-0.396***	-4.18	0.001
LEVERAGE	0.905**	2.18	0.042
LOSS	-0.150	-0.91	0.377
MB	-0.013	-0.37	0.716
VOLUME	0.387*	2.07	0.052
SD_VOL	-0.036	-0.21	0.835
AGE	-0.036	-0.32	0.751
SD_REV	0.206***	8.31	0.000
N		116	
YEAR FIXED EFFECTS		YES	
R-squared		75.81%	

The dependent variable in Panel B is idiosyncratic return volatility (*IDVOL)* computed over the 200 trading day windows before and after the announcement of MLP formation. *POST_MLP* equals one if the observation is after MLP formation; zero otherwise. *SIZE* is the natural logarithm of lagged total assets. *LEVERAGE* is lagged total debt scaled by lagged total assets. *LOSS* equals one if the firm incurred a pre-tax loss during the current year; zero otherwise. *MB* is the market to book ratio. *VOLUME* is the natural logarithm of the average trading volume over the estimation window. *SD_VOL* is the natural logarithm of the average daily trading volume, in hundreds, for firm *i* over the estimation window. *AGE* is the natural logarithm of the time firm *i* has been listed in Compustat. *SD_REV* is the standard deviation of annual revenues over the four-year window ending in time t, scaled by total assets. Coefficient estimates, t-statistics, and p-values are computed using standard errors clustered by industry (two-digit SIC), and are based on two-tailed tests.

* Indicates that the difference is statistically significant at the 10% level, using a two-tailed test.
** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.
*** Indicates that the difference is statistically significant at the 1% level, using a two-tailed test.

Table 9
MLP formation and bid-ask spreads.

Panel A: Mean bid-ask spread before and after MLP formation				
Window	N	*SPREAD*	t-Statistic	p-Value
Pre-MLP	44	1.123	5.06	0.000
Post-MLP	44	0.988	4.91	0.000
Difference	88	0.135	0.45	0.653

Panel B: Multivariate analysis of *SPREAD* around MLP formations			
	Coefficient	t-Statistic	p-Value
POST_MLP	-0.018	-0.20	0.841
SIZE	-0.031	-0.14	0.892
LEVERAGE	1.288	1.55	0.143
LOSS	-0.304	-1.23	0.238
MB	0.032	0.56	0.585
VOLUME	-0.337	-0.81	0.429
SD_VOL	-0.024	-0.08	0.940
AGE	0.360	1.64	0.122
SD_RET	33.348	1.31	0.212
SD_REV	-0.082	-1.15	0.268
N		78	
YEAR FIXED EFFECTS		YES	
R-squared		83.51%	

The dependent variable in Panel B is price-scaled bid-ask spread (*SPREAD)* averaged over the one year windows before and after the announcement of MLP formation. *POST_MLP* equals one if the observation is after MLP formation; zero otherwise. *SIZE* is the natural logarithm of lagged total assets. *LEVERAGE* is lagged total debt scaled by lagged total assets. *LOSS* equals one if the firm incurred a pre-tax loss during the current year; zero otherwise. *MB* is the market to book ratio. *VOLUME* is the natural logarithm of the average trading volume over the estimation window. *SD_VOL* is the natural logarithm of the average daily trading volume, in hundreds, for firm *i* over the estimation window. *AGE* is the natural logarithm of the time firm *i* has been listed in Compustat. *SD_RET* is the standard deviation of daily stock returns for firm *i* over the estimation window. *SD_REV* is the standard deviation of annual revenues over the four-year window ending in time t, scaled by total assets. Coefficient estimates, t-statistics, and p-values are computed using standard errors clustered by industry (two-digit SIC), and are based on two-tailed tests.

* Indicates that the difference is statistically significant at the 10% level, using a two-tailed test.

** Indicates that the difference is statistically significant at the 5% level, using a two-tailed test.

*** Indicates that the difference is statistically significant at the 1% level, using a two-tailed test.

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